April 28, 2000

Mr. Stephen E. Scace, Director
Nuclear Oversight and Regulatory Affairs
Northeast Nuclear Energy Company
PO Box 128
Waterford, CT 06385

SUBJECT: NRC-EVALUATED EMERGENCY PREPAREDNESS EXERCISE - INSPECTION REPORT NOS. 05000336; 05000423/2000-004

Dear Mr. Scace:

The enclosed report documents an inspection for public health and safety led by Mr. D. Silk at Waterford, Connecticut. The inspection evaluated the performance of your emergency response organization (ERO) during the March 15, 2000, Millstone Nuclear Power Station full-participation exercise. The inspectors discussed the findings of this inspection with your staff on March 16, 2000.

Based on the results of this inspection, it was determined that the overall performance of the ERO demonstrated, with reasonable assurance, that onsite emergency plans are adequate and that your organization is capable of implementing them. Simulated events were diagnosed accurately, emergency declarations were timely and accurate, offsite agencies were notified in a timely manner, protective action recommendations were appropriate, mitigation activities were properly coordinated, and the dose assessment staff performed effectively.

The NRC Region I staff participated with your ERO during this exercise. Based upon observations from our evaluation team, it was determined that your ERO interacted well with the NRC participants in each of your emergency response facilities.

No violations of NRC requirement were identified. No response to this letter is required.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

Sincerely,

/RA/

Wayne D. Lanning, Director
Division of Reactor Safety

Docket Nos. 05000336, 05000423
License Nos. DPR-65, NPF-49

Enclosure: Inspection Report Nos. 05000336; 05000423/2000-004

cc w/encl:
B. D. Kenyon, President and Chief Executive Officer - NNECO
R. P. Necci, Vice President - Nuclear Technical Services
L. J. Olivier, Senior Vice President and Chief Nuclear Officer - Millstone
M. H. Brothers, Vice President - Nuclear Operations
F. C. Rothen, Vice President - Nuclear Work Services
J. T. Carlin, Vice President - Human Services - Nuclear
G. D. Hicks, Director - Nuclear Training Services
C. J. Schwarz, Station Director
D. A. Smith, Manager - Regulatory Affairs
L. M. Cuoco, Senior Nuclear Counsel
J. R. Egan, Esquire
N. Burton, Esquire
V. Juliano, Waterford Library
J. Buckingham, Department of Public Utility Control
State of Connecticut SLO Designee
First Selectmen, Town of Waterford
D. Katz, Citizens Awareness Network (CAN)
T. Concannon, Co-Chair, NEAC
R. Bassilakis, CAN
J. M. Block, Attorney, CAN
G. Winslow, Citizens Regulatory Commission (CRC)
E. Woollacott, Co-Chair, NEAC
FEMA, Region I

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T. Madden, OCA
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J. Shea, OEDO
J. Zimmerman, PM, NRR
Inspection Program Branch, NRR **<IPAS>**
R. Conte, DRS
D. Silk, DRS

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos:	05000336, 05000423
License Nos:	DPR-65, NPF-49
Report Nos:	05000336; 05000423/2000-004
Licensee:	Northeast Nuclear Energy Company P. O. Box 128 Waterford, CT 06385
Facility:	Millstone Nuclear Power Station
Dates:	March 14 -16, 2000
Inspectors:	D. Silk, Senior Emergency Preparedness Inspector, DRS (Lead) C. Gordon, Senior Health Physicist, Decommissioning Branch, DNMS R. Urban, Project Engineer, Millstone, DRP R. Barkley, Project Engineer, Branch 3, DRP
Approved by:	Richard J. Conte, Chief Operational Safety Branch Division of Reactor Safety

EXECUTIVE SUMMARY

Millstone Nuclear Power Station
Full-Participation Emergency Preparedness Exercise Evaluation
March 15, 2000
Inspection Report Numbers 05000336; 05000423/2000-004

Based on the results of this inspection, it was determined that the overall performance of the emergency response organization demonstrated, with reasonable assurance, that onsite emergency plans are adequate and that the licensee is capable of implementing them. Simulated events were diagnosed accurately, emergency declarations were timely and accurate, offsite agencies were notified in a timely manner, protective action recommendations were appropriate, mitigation activities were properly coordinated and the dose assessment staff effectively implemented their procedures.

At the critique, the licensee identified issues, in addition to those identified by the NRC. The most significant issues are under consideration for entry into the corrective action program. Overall, the critique was balanced with positive and negative findings and was appropriately self-critical.

Report Details

P4 Staff Knowledge and Performance

a. Inspection Scope (IP 82301)

During this inspection, the inspectors observed and evaluated the licensee's biennial full-participation exercise in the simulator control room (SCR), the technical support center (TSC), the operations support center (OSC), and the emergency operations facility (EOF). The inspectors assessed the emergency response organization's (ERO) recognition of abnormal plant conditions, classification of emergency conditions using the emergency action levels (EALs), notification of offsite agencies, development of protective action recommendations (PARs), command and control, communications, utilization of repair and field monitoring teams, performance of dose assessment and projections, and the overall implementation of the emergency plan. In addition, the inspectors observed the post-exercise critique to evaluate the licensee's self-assessment of the exercise.

b. Observations and Findings

b.1 SCR

The SCR crew quickly recognized and responded to off-normal conditions. The Alert was promptly classified at 0828 hours and notification of offsite agencies was timely. Part of the notification includes a voice recording which briefly describes the event so that offsite officials can call in to get the information. The communicator could not record the initial message for the Alert declaration because the microphone he was using in the SCR was disconnected from the computer. The problem was quickly identified and resolved for subsequent notifications from the SCR. There were no adverse effects from this issue as pager activation is the primary method of notifying offsite agencies. The licensee identified this issue during the critique and will include a check of the microphone status when conducting surveillances of the communication equipment. This issue is unlikely to occur in the actual control room because the communications area is designated only for that function and therefore equipment will not be disturbed.

The ERO was immediately notified at the Alert declaration and began to mobilize to staff the emergency facilities. Implementation of procedure EPOP 4412, Evacuation and Assembly, was initiated 65 minutes after the Alert declaration. The control room director of station emergency operations (CRDSEO) was about to implement the procedure when the EOF assumed the DSEO function. The EOF DSEO assumed control but the announcement to initiate a site evacuation did not occur until 0933 hours because he was fulfilling other procedural requirements. No adverse consequences resulted from this delay. Although there are no time requirements to initiate EPOP 4412, the implications is that evacuation and assembly be performed as soon as possible. The licensee identified this as an area for improvement and considers it to be a procedural implementation issue (Condition Report M3-00-0910).

Throughout the exercise, there was good flow of information out of the SCR to the other facilities. Operators quickly identified abnormal conditions and implemented the appropriate procedures.

b.2 TSC

The TSC was activated well within the 60 minute requirement following the declaration of the Alert. Site personnel from the unaffected unit assumed support roles in the TSC that enhanced the licensee's capability to respond to the event. Sufficient staff were present to conduct all TSC tasks denoted in the emergency plan.

The assistant director for technical support (ADTS) quickly assumed his responsibilities, including good initial briefings to the NRC resident inspector and TSC personnel. Communications were quickly established with the SCR, EOF, and the OSC. The first action taken by the ADTS after activation was establishing TSC and OSC priorities and duties.

The ADTS made two classifications during the exercise. The ADTS made the Site Area Emergency (SAE) classification quickly and accurately, well within the goal of 15 minutes from the time of event occurrence. Although the ADTS made an accurate General Emergency (GE) classification within 15 minutes, confusion about the radiation levels and whether the release of radiation occurred inside or outside containment led to a 5 minute delay.

Good communications were observed between the TSC and OSC. Periodic briefings conducted by the ADTS were detailed and informative. The ADTS and the DSEO in the EOF communicated frequently. However, some briefings over the site PA system by the DSEO were not well heard and listened to by personnel in the TSC. Status boards with current plant conditions, parameters, and sequence of events were periodically updated.

b.3 OSC

The OSC achieved minimum staffing within 22 minutes of the Alert declaration and full staffing was achieved shortly thereafter, well within the one hour requirement. Two and three-way communications were frequently used on critical tasks by managers and plant equipment operators. Misstatements were identified quickly and corrected. Key plant procedures and drawings were readily accessible for use. The multiple damage teams were well briefed and tracked. Teams maintained good communications while en route to job locations and they were debriefed upon returning to the OSC. Team members took prudent safety and radiological precautions such as approaching potentially damaged and unsafe areas in a conservative manner. One team demonstrated good initiative by attempting to locate a steam suit from offsite sources to supplement the number of available suits onsite.

The OSC and the TSC are co-located. Although this enhances communications between the facilities, the facility was crowded and became warmer as the exercise progressed. However, in accordance with procedure, oxygen and carbon dioxide levels were monitored by licensee personnel throughout the exercise to ensure habitability was acceptable.

b.4 EOF

The EOF was staffed and activated in a timely manner. The DSEO demonstrated good command and control by conducting timely and informative briefings and coordinating the EOF staff. The EOF staff supported the DSEO's efforts by keeping the status boards updated, verifying plant and radiological data, and interfacing with offsite officials. EOF personnel closely followed plant conditions in anticipation of further plant degradation and emergency classification escalation. The EOF staff closely reviewed the EALs and verified the SAE and GE declarations. The associated notifications to the offsite agencies for the SAE and GE declarations were timely. The PARs were appropriate based upon the existing simulated plant and radiological conditions and were provided via telephone by the DSEO to state officials within seven minutes of the GE declaration.

b.5 Dose Assessment

The dose assessment function was effectively implemented by the radiological dose assessment team (RDAT) within the EOF. Activation and staffing of the EOF dose assessment area were well-timed. The manager of radiological dose assessment (MRDA) and manager of radiological consequence assessment (MRCA) provided good direction and command over radiological assessment and radiological control activities while keeping the DSEO informed when requested.

The RDAT maintained a pro-active approach throughout the exercise in that dose projections were continually performed as conditions changed. Team members were familiar with the operation of the dose models and how to interpret results relative to total effective dose equivalent. Although displays of plant operational data were not readily available in the EOF dose assessment area, the team was able to maintain communications with TSC counterparts to obtain status of necessary parameters. Review of dose assessment reports indicated that updated source term, meteorological, and forecast data were used accurately and coordinated well with offsite field teams.

Three field teams were assembled promptly and dispatched prior to an anticipated release. Teams were deployed to appropriate downwind locations to track plume boundaries and define the centerline. Confirmatory measurements reported by field teams were used by the RDAT to refine projected doses at appropriate times. Overall, direction and control of field teams were effective.

Dose assessment equipment, instrumentation, and communications devices used by RDAT members functioned well. Some confusion was observed in response to a "stack multiplier" used at a crucial time in the scenario to artificially increase source term concentrations in order to enable field teams to demonstrate additional response actions. This concern was discussed with the licensee to ensure that all parts of future scenarios are produced realistically. Licensee RDAT staff generally showed good support to the NRC response team in assisting their access to information displays and interacted positively during comparison of computer-based dose assessment model (IDA/ADAM and RASCAL) results.

b.6 Licensee Exercise Critique

The licensee conducted a player debrief immediately following the exercise. The debriefs were candid. Licensee controllers compiled their observations and findings for the critique. At the critique on March 16, 2000, a presentation was made primarily emphasizing the fulfillment of exercise objectives. A draft critique report, completed prior to the critique, contained more items than were mentioned during the licensee's critique. Overall, the licensee identified issues, in addition to the ones identified by the inspectors. Negative comments, in addition to positive comments, were presented. Overall, the critique was thorough and self-critical.

c. Overall Conclusions

Based on the results of this inspection, it was determined that the overall performance of the ERO demonstrated, with reasonable assurance, that onsite emergency plans are adequate and that the licensee is capable of implementing them. Simulated events were diagnosed accurately, emergency declarations were timely and accurate, offsite agencies were notified in a timely manner, PARs were appropriate, mitigation activities were properly coordinated, and the dose assessment staff effectively implemented their procedures.

At the critique, the licensee identified issues, in addition to those identified by the NRC. The most significant issues are under consideration for entry into the corrective action program. Overall, the critique was balanced with positive and negative findings and was appropriately self-critical.

P8 Miscellaneous EP Issues

P8.1 Scenario Preparation and Exercise Control (IP 82302)

An in-office review of the exercise objectives and scenario was conducted by the inspectors prior to the exercise. It was determined that the scenario was adequate to support the demonstration of the stated objectives and satisfactorily exercised a significant portion of the emergency response capabilities. There were no inappropriate controller actions observed during the exercise. The use of the "stack multiplier" during this exercise was discussed with the licensee as mentioned in Section P.4.b.5.

V. Management Meetings

X1 Exit Meeting

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on March 16, 2000. The licensee acknowledged the inspectors' findings.

INSPECTION PROCEDURES USED

82301: Evaluation of Exercises for Power Reactors
82302: Review of Exercise Objectives and Scenarios for Power Reactors

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS USED

ADTS	Assistant Director for Technical Support
DSEO	Director of Station Emergency Operations
EAL	Emergency Action Level
EOF	Emergency Operations Facility
ERO	Emergency Response Organization
GE	General Emergency
MRCA	Manager of Radiological Consequence Assessment
MRDA	Manager of Radiological Dose Assessment
OSC	Operations Support Center
PAR	Protective Action Recommendation
RDAT	Radiological Dose Assessment Team
SAE	Site Area Emergency
SCR	Simulator Control Room
TSC	Technical Support Center